



Assembly and operation manual

Drives **Levigato (LG series)** for garage doors

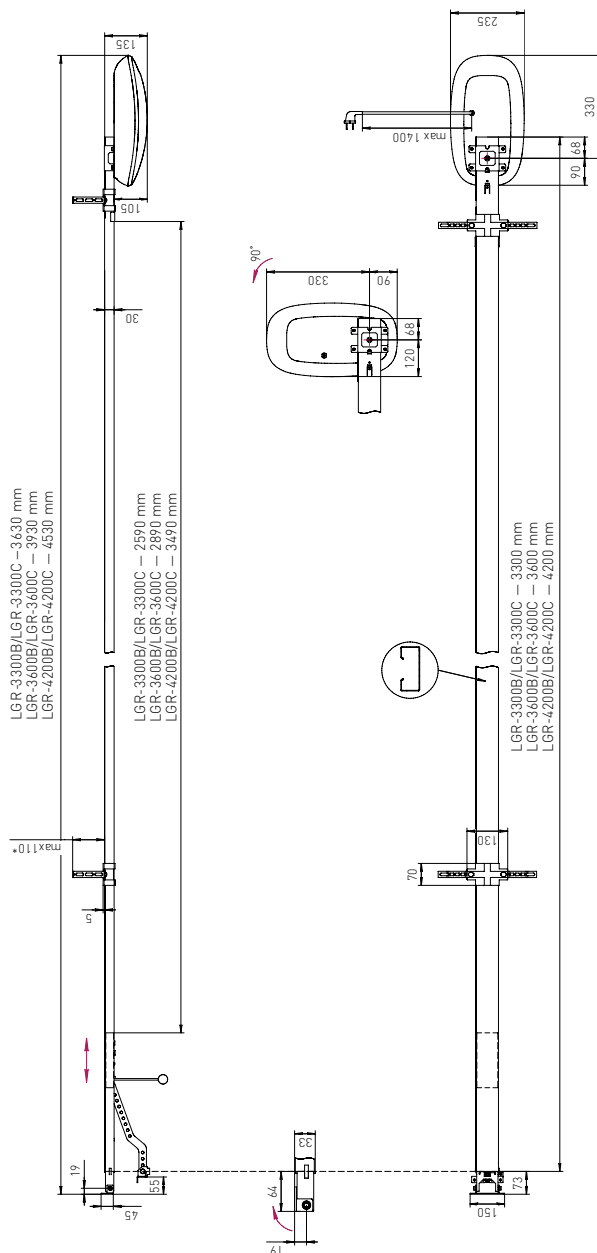
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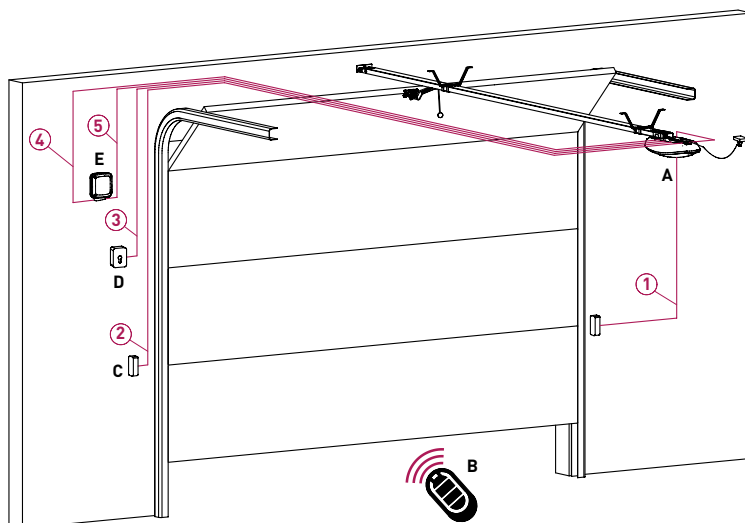
Sizes in figures are given in millimeters.
Abmessungen auf den Zeichnungen sind in mm angegeben.
Les dimensions référencées sur les dessins sont en millimètres.

Fig. | Abb. 1



* Dimension is provided by the delivery set.
Die Größe wird mit dem Lieferumfang gewährleistet.
La dimension est assurée par l'ensemble fourni.

Fig./Abb. 2



A — Electric drive
B — Remote control
C — Photocells
D — Key-switch
E — Lamp
 (with built-in antenna)

A — Elektroantrieb
B — Funkhandsender
C — Lichtschranke
D — Schlüsseltaster
E — Lampe
 (mit der eingebauten Antenne)

A — Commande électrique
B — Télécommande
C — Photocellules
D — Interrupteur à clé
E — Lampe
 (intégrée à l'Antenne)

Nº	CIRCUIT	LENGTH 1 M...20 M	LENGTH 20 M...50 M
1	RX photocells receiver	4×0.5 mm ²	4×1 mm ²
2	TX photocells transmitter	2×0.5 mm ²	2×1 mm ²
3	Key-switch	2×0.5 mm ²	2×1 mm ²
4	Lamp	2×0.5 mm ²	2×1 mm ²
5	Antenna	RG58 max 20 m	

Nº	KETTE	LÄNGE 1 M...20 M	LÄNGE 20 M...50 M
1	Empfänger von RX Fotoelementen	4×0,5 mm ²	4×1 mm ²
2	Empfänger von TX Fotoelementen	2×0,5 mm ²	2×1 mm ²
3	Schlüsseltaster	2×0,5 mm ²	2×1 mm ²
4	Lampe bzw. Signalleuchte	2×0,5 mm ²	2×1 mm ²
5	Antenne	RG58 max. 20 m	

Nº	CIRCUIT	LONGUEUR 1 M...20 M	LONGUEUR 20 M...50 M
1	Récepteur de photocellules RX	4×0,5 mm ²	4×1 mm ²
2	Emetteur de photocellules TX	2×0,5 mm ²	2×1 mm ²
3	Interrupteur à clé	2×0,5 mm ²	2×1 mm ²
4	Lampe	2×0,5 mm ²	2×1 mm ²
5	Antenne	RG58 max 20 m	

Fig.|Abb. 3

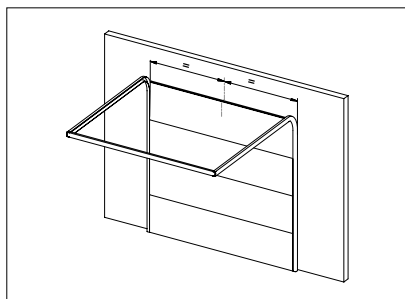


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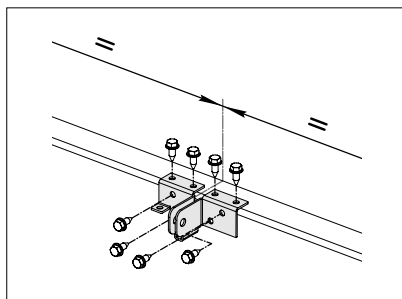


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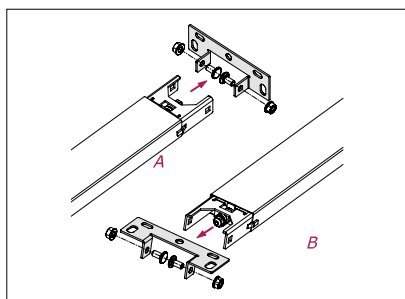


Fig.|Abb. 6

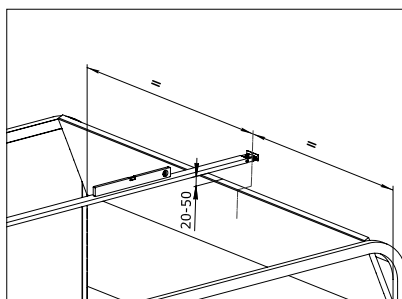


Fig.|Abb. 7

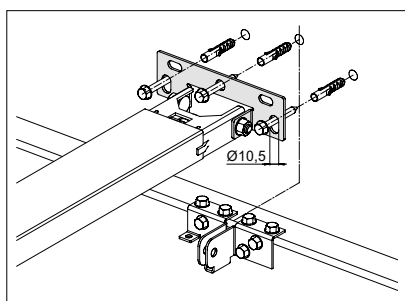


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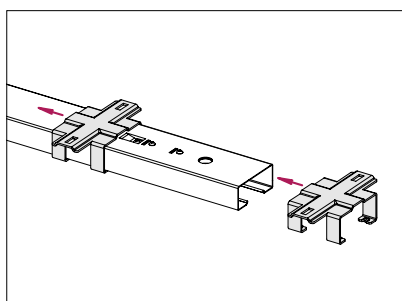


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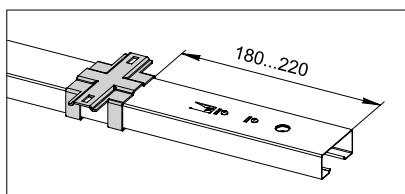


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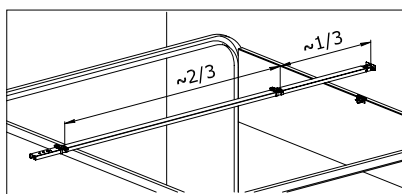


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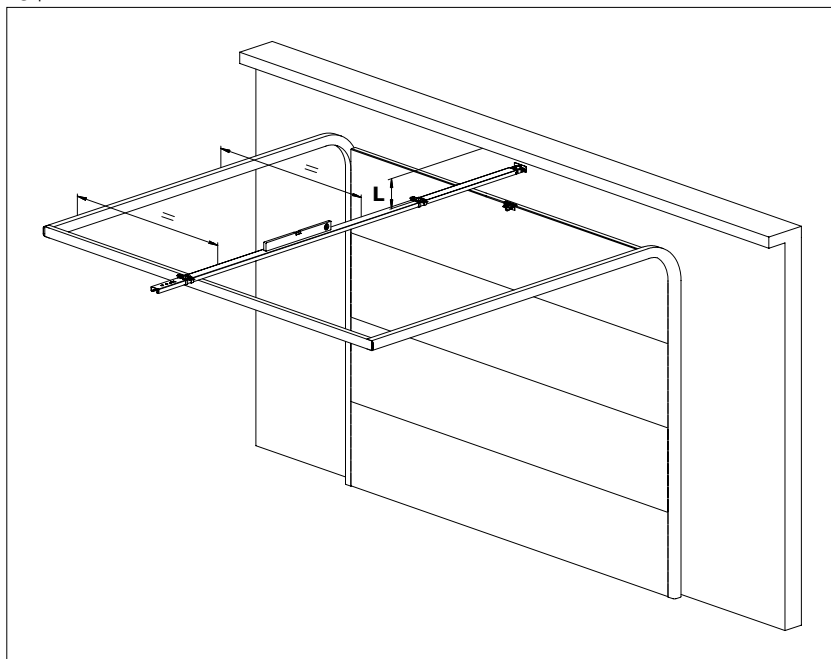


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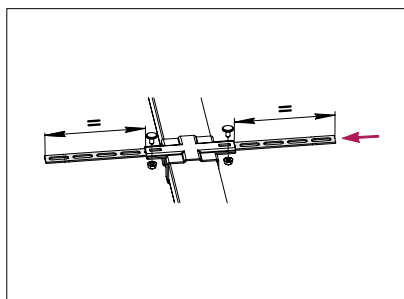


Fig.|Abb. 13

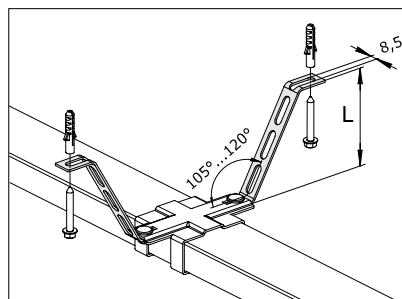


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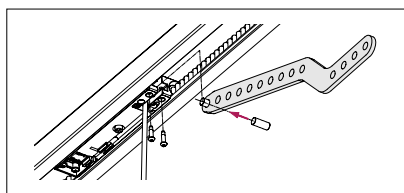


Fig.|Abb. 15

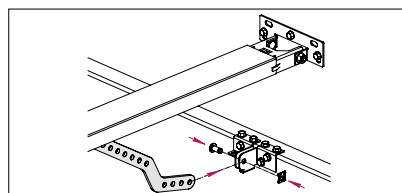


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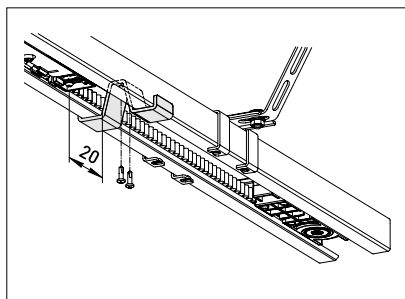


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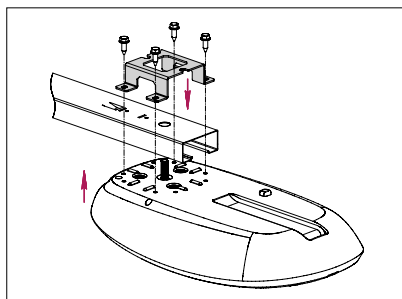


Fig.|Abb. 18

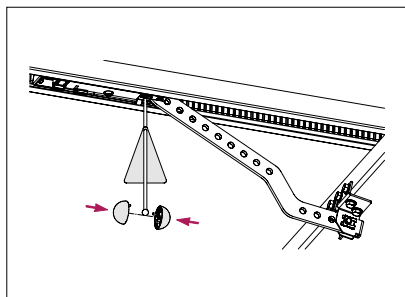


Fig.|Abb. 19

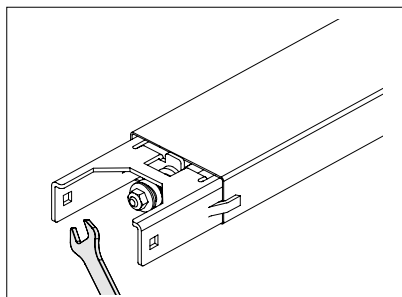


Fig.|Abb. 20

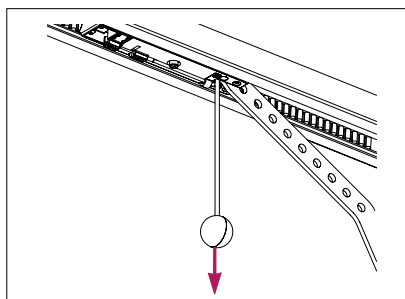


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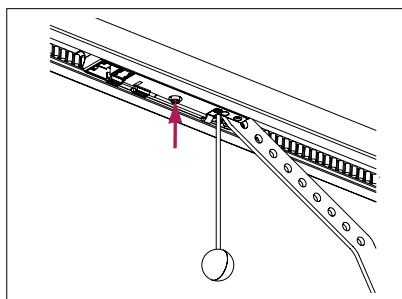


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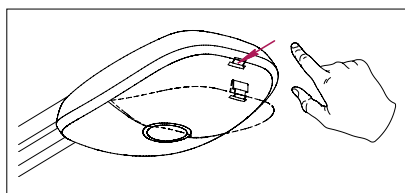


Fig. | Abb. 23

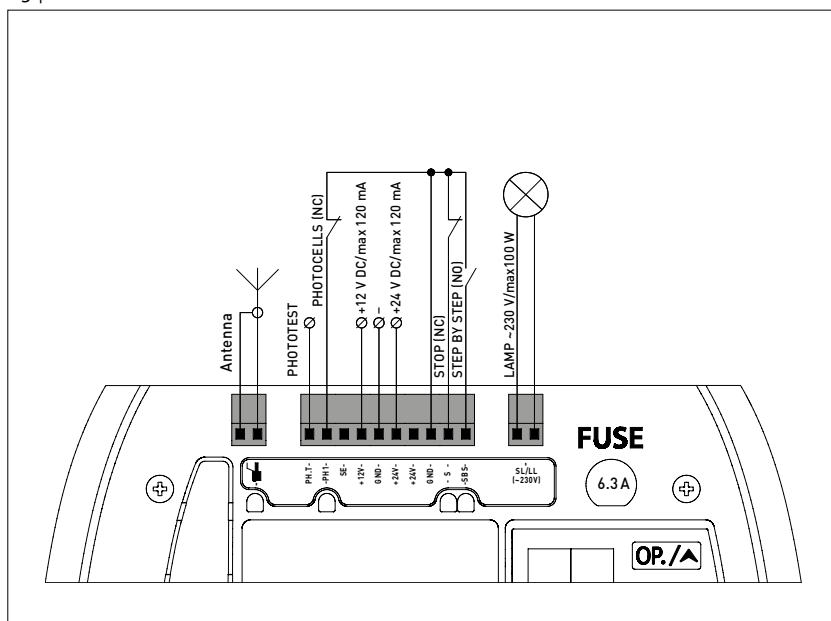


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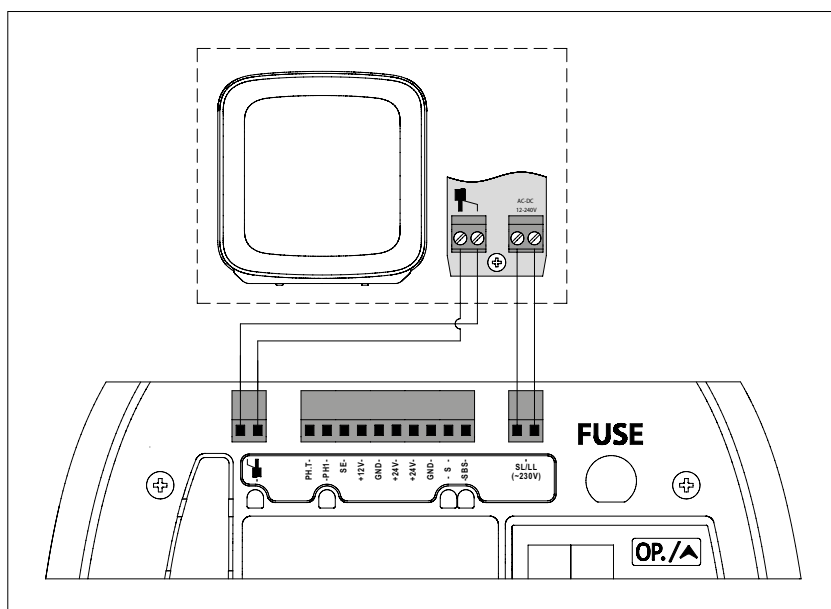


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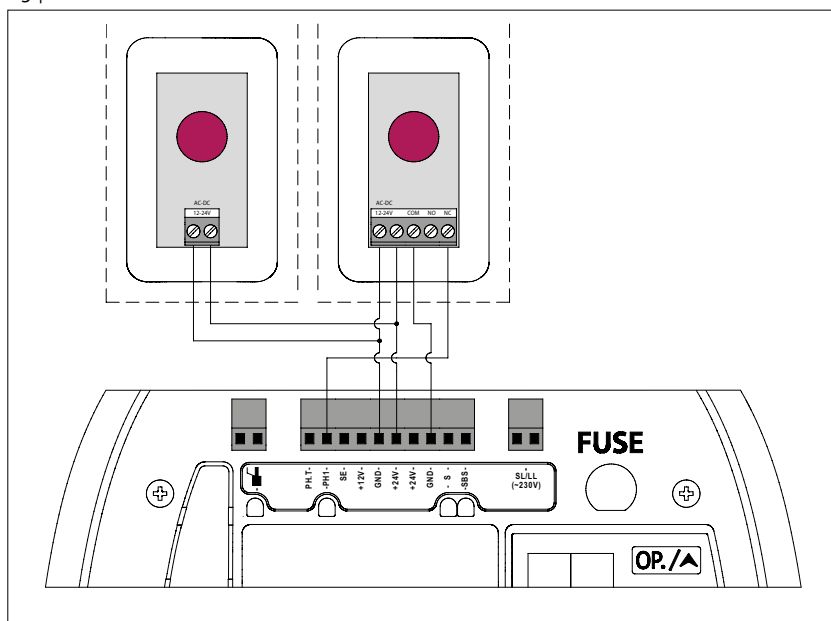


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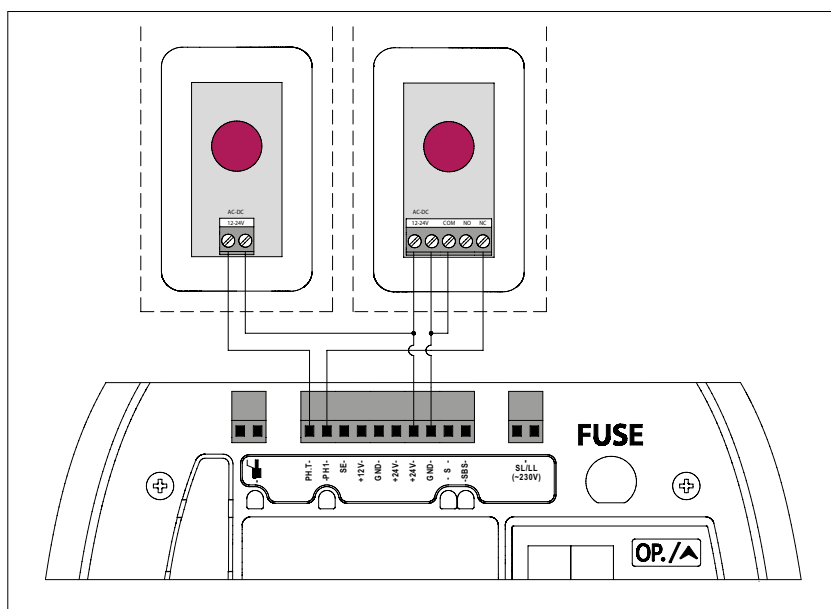
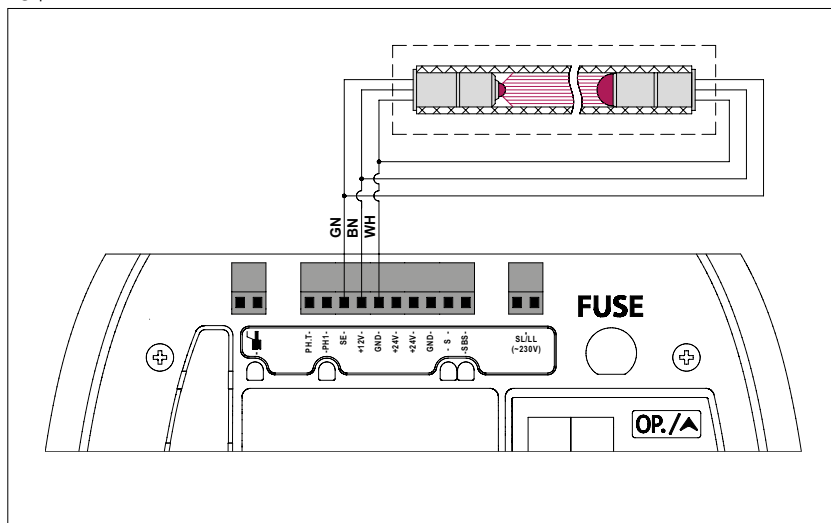


Fig. | Abb. 27



GN — green;
BN — brown;
WH — white

GN — grün;
BN — braun;
WH — weiß

GN — vert ;
BN — marron ;
WH — blanc

Fig. | Abb. 28

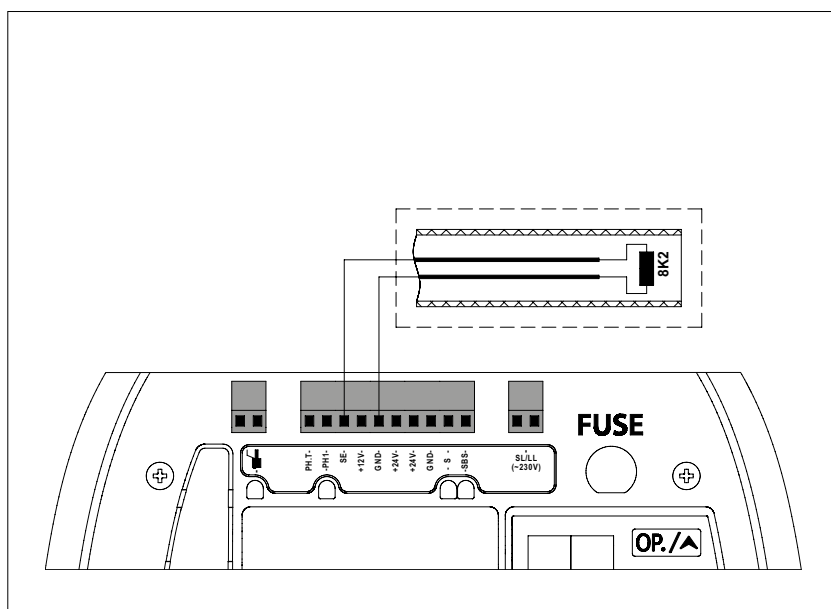


Fig. | Abb. 29

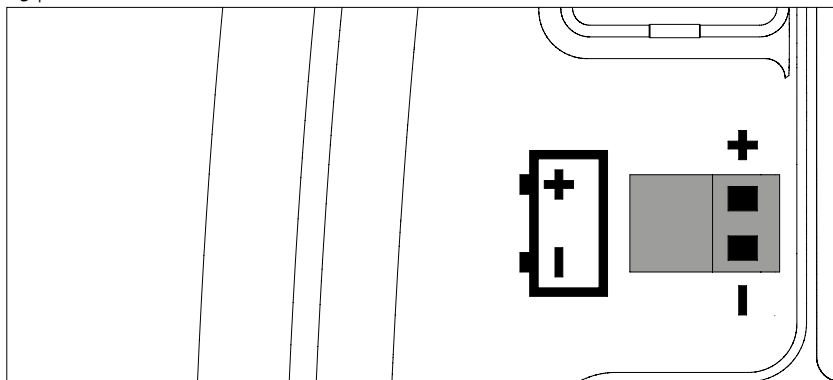


Fig. | Abb. 30

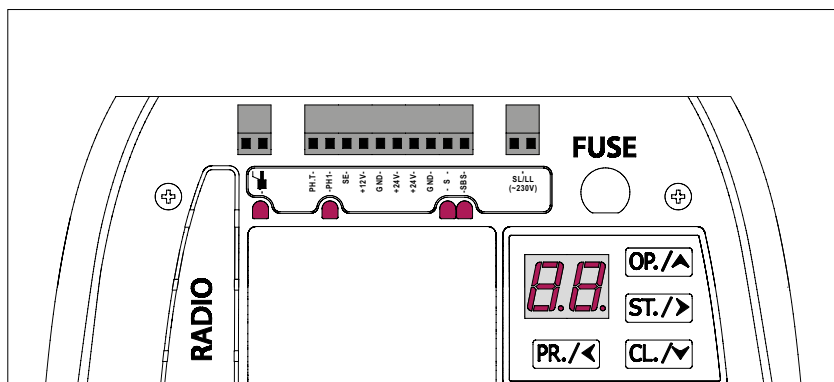
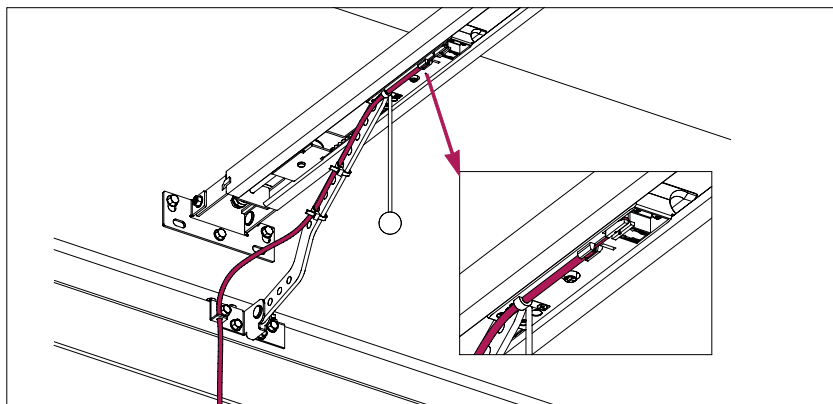


Fig. | Abb. 31



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1. GENERAL WARNINGS AND SAFETY RULES

1.1 GENERAL INFORMATION



ATTENTION! This manual contains important information concerning safety. Before installation and operation study closely all the information provided below. Save this manual for future reference!

Follow safety and health regulations provided by any active regulatory documents and by those in this manual. Failure to comply with the rules can lead to serious damage, injury or death.

Please, ensure compliance with the requirements of standards concerning the design, mounting and operation of automated doors (EN 12604, EN 12453), as well as other possible local rules and regulations.



ATTENTION! Mounting, connections, adjustment, commissioning, maintenance, disassembly and disposal of the product should be performed only by qualified (professional) and trained specialists (EN 12635), competent and specialized organizations.

Mounting, programming, adjustment and operation of the product in violation of the requirements are prohibited, as this can result in damages, injuries and cause losses.

Improper use of the product or making any changes in any elements of the product design are prohibited. The manufacturer is not liable for any damages, caused by unauthorised changes in the product or its improper use.

When performing any works (mounting, repair, maintenance, cleaning etc.) and connections inside the drive, disconnect the mains circuit. If the master switch or similar device is out of sight, then attach a safety sign stating: 'Do not turn on. People are working' and take measures preventing the possibility of accidental restoring the power supply.

The manufacturer and supplier do not directly control the doors installation, maintenance and operation of the drive and automation devices, and are not responsible for the safety of operation and maintenance of the product.

The company reserves the right to introduce changes in this manual and the product construction without prior notification, but preserving the same functional capabilities and designation.

The content of this manual cannot be used as the basis for legal claims.

1.2 DURING INSTALLATION



ATTENTION! The condition of all components and materials should be applicable for use and should comply with applicable regulations. The applied instruments and materials should be in good repair and should comply with the safety norms, standards and instructions.

The door design should be suitable for automation, and should be in good mechanical condition.

The elements of the door design shall not be located in the public pedestrian area or on the road.

Before the drive mounting, make sure that the door leaf is balanced and when releasing it remains stationary in any position. Easy movement of the door leaf when opening and closing is provided. The force, when moving the door leaf manually should be no more than 150 N (EN 12604).

Door dimensions and specifications should be within acceptable limits (section 2.2. 'Technical specifications'). The installation location must correspond to the declared temperature operating range indicated on the drive marking.

Before installation, remove all unnecessary parts (cables, ropes, chains, etc.) and turn off all unnecessary equipment, disconnect locking devices.

There should be sufficient space for the installation and operation of the drive system. Easy and safe manual release of the drive rail should be provided.

Element of manual release design (cord) should be placed at a height of less than 1.8 m. Install a sign with information about manual release (is included).

Stationary control devices should be located within sight of the doors, at a height not less than 1.5 m and at a distance from the moving elements. Control devices should not be publicly available.

The drive can not be used for the doors, not equipped with a device to protect against the falling of the door leaf.

The drive can not be used with doors with a built-in wicket door if the drive is not locked when the wicket door is open.

When a mechanical locking bolt is installed on the doors ensure that the drive is locked when the doors are locked.

If there is no wicket door within the door leaf or alternative means of access to the garage, installation of an emergency manual release device must be carried out (external lock to release the drive rail/is ordered separately). Use an external manual release device only when the doors are closed!

Please, make sure that the surface where the drive system is installed, is solid and can be used as a reliable and rigid support. Otherwise, take measures to strengthen the installation places, apply additional supports.

The socket must be installed in an accessible place so that the power cord (power cable) of the drive is not located in the area of door movement and other moving parts. The electrical network must be equipped with a protective earth. Please, make sure, that the section of the mains supply, to which the drive is connected, is equipped with the short circuit protection device (Residual Current Device (RCD) automatic switch or another equivalent device). The distance between the terminals in the protection tripping unit should be at least 3 mm.

The electric cables of the control and safety devices should be laid separately from the cables with mains voltage. The cables should be protected from contact with any rough and sharp surfaces by using corrugated tubes, pipes and cable ducts to lay the cables. Use copper multicore cable with double insulation for electric connection of the drive system components. The parameters of the electric cables (section, number of wires, length etc.) should comply with the connection diagram, device power, laying distance, way of laying, ambient conditions.

Check and, if necessary, adjust the drive for safe door operation (EN 12453), as incorrect adjustment may be dangerous. The correct and safe operation is set up by trained and qualified specialists of the competent organization.

If necessary, the protection against compression, jamming, gripping, tightening and other hazards should be provided: installation of safety devices; installation of protective designs enclosing the zone of the door leaf movement; observance of safe distances and gaps between the door leaf and fixed enclosing designs (EN 12604).

When operating out of sight of the doors or when the automatic door closing is activated, photocells (or an equivalent safety device) must be installed.

Place a warning sticker (is included) in a conspicuous place or near to stationary control devices.

1.3 DURING OPERATION

ATTENTION! The product should not be used by children or persons with limited physical, sensory or mental abilities, as well as not trained persons with insufficient experience and knowledge. Do not let children play with control elements. Remote controls should be located in the areas, unreachable by children.

Do not touch moving door or moving parts. Before starting the door movement make sure, that no people, animals, vehicles or objects are in the danger area. Observe the door movement until it is fully open or closed. It is allowed to pass when the doors are completely stopped and motionless. The movement of people and vehicles is forbidden when the doors are moving.

It is forbidden to stay under an open doors. The doors with automatic drive can be triggered at an unexpected moment!

Be careful when using manual release (section 4.2. 'Manual release') as the open doors can quickly fall because of the loosening or breakage of the springs, or unbalance.

Check the drive system and the door design regularly, in particular, check cables, springs and mounting hardware, for the signs of wear, damage or imbalance. It is prohibited to use the doors requiring repair or adjustment, as the mounting defect or incorrect balance of doors may result in injury or product failure. It is necessary to check once a month that when closing in case of contact of a door leaf with a subject 50 mm high from the earth (floor) the direction of a door leaf movement changes (for operation of built-in system of protection). Check the operation of safety devices (photocells, Stop, etc.) on a monthly basis.

Please, follow the safety measures when using the power cable:

- fully insert the plug into the socket; when taking the plug out of the socket do not pull by the cord;
- do not use a socket with bad contacts;
- do not touch a plug with wet hands;
- do not damage the power cable, do not twist the cable, do not bend and do not stretch it;
- do not place heavy objects on the power cable and do not place it near hot objects;
- ensure easy access to the socket;
- use only the power cable supplied by the manufacturer;
- it is forbidden to use a defective or damaged power cable.

In the case of power cable (power cord) damage, it should be replaced by a manufacturer's specialist or maintenance department specialist.

When using a curve (filter type) A, the sound pressure level of the drive is ≤ 70 dB (A) at a distance of 3 meters.

The product is constructed for use in dry buildings and is not intended for use in the presence of acid, salt or explosion hazard media.

No foreign objects, water or other liquid should be present in the drive or on other exposed parts. Operation of the equipment in this condition is prohibited.

The influence of environmental factors (direct sunlight, moisture, dust) and construction works (chips, dust) on the product is not allowed, it can lead to functional malfunctions.

The sources of heat and naked flame must be removed at a sufficient distance from the drive and its components. The violation of this requirement can result in the damage of the product, cause it to malfunctioning, cause fire or create other dangerous situations.

It is necessary to maintain regularly the drive system and doors to ensure an efficient and safe operation. Maintenance and repair must be documented by the persons performing them, and the owner is obliged to keep these documents.

Do not use the doors if the repair is required!

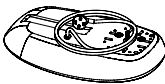





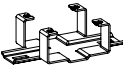

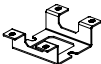












2. PRODUCT DESCRIPTION

LG series drive with a drive rail is designated for the automation of balanced sectional garage doors. The drive with a drive rail establishes it as a set for the automation of a garage door.

The drive consists of a gear-motor with electric motor, 24 V DC transformer, electric control unit with built-in radio control module and LED lighting. The drive is powered from by 230 V/50 Hz mains power. In the case of temporary loss of mains power the drive rail can be released, which will allow the door leaf to be operated manually.

2.1 DELIVERY SCOPE

Table 1

DRIVE SET						
1	Drive		1 pc.	11	4x18 Screw	 2 pcs.
2	Door bracket		1 pc.	12	Screw 3.9x9.5 (drill-point)	 2 pcs.
3	Bracket to mount the rail on the wall		1 pc.	13	Dowel 8x19.5	 1 pc.
4	Bracket to mount the rail on the ceiling		2 pcs.	14	Stopper	 1 pc.
5	Bracket to mount the drive on the rail		1 pc.	15	Assembly and operation manual	— 1 pc.
6	Support		1 pc.	16	Remote control AT-4N-868	 2 pcs.
7	Axis Ø8x19		1 pc.			
8	M8x16 bolt		6 pcs.	17	Release label	 1 pc.
9	6.3x20 screw		12 pcs.			
10	M8 Nut		6 pcs.	18	Safety sticker	 1 pc.
DRIVE RAIL KIT						
19	Drive rail (assembled)					1 pc.
20	Suspension strip					2 pcs.
21	Rod					1 pc.
22	Release unit part (ball-handle)					2 pcs.



ATTENTION! Upon receipt of the product, please check the completeness of the kit and make sure all the kit components do not have any visible damage. In case of any missing components, please contact the product supplier. Fixings (dowels, anchors etc.), required for fixing the components to the wall and ceiling, are not included in the kit, as their type depends on the material and thickness of the wall, on which they are installed.

2.2 TECHNICAL SPECIFICATIONS

Table 2 — drives

PARAMETER	LG-600F-868 LG-600F-868-GB	LG-800-868 LG-800-868-GB	LG-1000F-868 LG-1000F-868-GB	LG-1200-868 LG-1200-868-GB
Maximum pulling force, N	600	800	1000	1200
Rated pulling force, N	300	350	400	450
Maximum door opening speed, m/s	0.2	0.15	0.2	0.15
Maximum speed at the force 150 N (corresponds to the maximum force of the balanced door leaf), m/s	0.185	0.128	0.185	0.128
Power	230 V (±10%)/50 Hz			
Power consumption at rated force, W	280	220	400	330
Maximum power consumption in standby mode (without accessories), W	2.5			
Maximum door area*, m ²	8.4	11.2	16.0	18.6
Maximum weight of the door leaf**, kg	140	220	180	250
Maximum use intensity (at the door height up to 2.4 m), cycles/hour	18			
Maximum time of continuous operation at the force 150 N (corresponds to the maximum force of the balanced door leaf)	20 minutes			
Time of illumination after the door stops moving	This parameter is regulated in the range 0...500 s; default value is 30 s			
Remote control	868.15±0.15 MHz/dynamic code/maximum 64 remote controls			
Protection class	I			
Protection degree	IP20			
Working temperature range, °C	-20...+50			
Drive weight, kg	5.0	4.7	5.5	4.9



ATTENTION! Technical specifications are valid at ambient temperature +20 °C (±5 °C). In the models LG-600F-868/LG-800-868/LG-1000F-868/LG-1200-868 is used the **E/F type** power plug. In the models LG-600F-868-GB/LG-800-868-GB/LG-1000F-868-GB/LG-1200-868-GB is used the **G type** power plug. The type of the power cable is H05VV-F 3G0.75 mm².

Table 3 — rails

PART NO.	RAIL TYPE	MAXIMUM DOOR HEIGHT, MM *
LGR-3300B	belt	2400
LGR-3600B	belt	2700
LGR-4200B	belt	3300
LGR-3300C	chain	2400
LGR-3600C	chain	2700
LGR-4200C	chain	3300

* The data shown is for standard mounting of ALUTECH sectional garage doors. Check with the manufacturer for the maximum area and height of doors, depending on the combination of the drive with the doors of different mounting type.

** The data are given for a specific type of ALUTECH doors and comply with the requirements of the safety standard for obstacle detection (EN 12453 type of built-in device C) for the factory settings of the drive.

The sizes (overall, connection, mounting dimensions), which are ensured by the scope of supply, are presented in *fig. 1*.

The service life of the product is 8 years with the intensity of work of 10 cycles of 'opening-closing' of the gate per day.

3. PREPARATION FOR ASSEMBLY

Prior to mounting:

- read the section 1. 'General warnings and safety rules'. Make sure that all rules and requirements are met.
- determine the place, where each component of the drive system will be installed. *Fig. 2* presents a typical diagram of the garage door automation. Together with the user, determine the places for the installation of the control devices.
- determine the scheme, according to which all the electric devices of the drive system will be connected.
- lay the electric cables to the places, where the drive system components are to be installed, complying with the regulations in force.

4. MOUNTING

4.1 DRIVE RAIL AND DRIVE MOUNTING

Recommended mounting procedure:

- determine and mark the mounting line in the middle of the door (*fig. 3*). If mounting cannot be performed in the middle of the door, it is acceptable to mount at the distance not exceeding 100 mm to left or to the right from the middle of the door.
- Install the door bracket using eight 6.3×20 screws (*fig. 4*). Drill Ø5 mm holes in the door leaf metal.



ATTENTION! Limit the drilling depth during drilling.

Do not allow through drilling of the door leaf.

- Install the rail fastening bracket on the wall on the drive rail using two M8×16 bolts and two M8 nuts (*fig. 5A*). The product construction allows turning of the bracket by 90° in relation to the rail during installation (*fig. 5B*), e.g., to mount the rail on the ceiling without suspension strips.
- Mark the rail fastening bracket installation area on the wall (*fig. 6*). The clearance between the rail and the maximum (top) spot of the door movement should be 20–50 mm.
- Fasten the rail fastening bracket on the wall (*fig. 7*).



ATTENTION! Fixings (dowels, anchors), required to install the rail, should be selected to comply with the type of construction surfaces present (material and thickness of the wall or ceiling). They are not included in the kit. The fittings should be able to bear the weight of the rail with the drive fitted and resist the force required to open and close the door. Beware of wear and deformation, which will occur in time.

- Install the brackets, fastening the rail to the ceiling, on the drive rail (*fig. 8*).
- Install one bracket at the distance 180...220 mm from the rail edge (*fig. 9*).
- Install the second bracket in ensuring position which ensures the best stability of the rail. For example, at 1/3 from the door opening (*fig. 10*).
- Position (align) the rail in relation to the door construction (*fig. 11*). Adjust the position of the brackets of the rail and determine the necessary distance **L** from the rail to the ceiling (suspension distance).

- Install suspension strips on the brackets, fastening the rail to the ceiling, and align them (*fig. 12*). Fasten the suspension strip on the bracket using two M8×16 bolts and two M8 nuts.
- Bend the suspension strip on two sides, preserving the previously measured size **L** and bend angle (*fig. 13*). Fasten the suspension strips on the ceiling using fixings (dowels, anchors).



ATTENTION! The suspension strips ensure the maximum **L** distance is 110 mm. In case of a larger **L** distance use additional suspension strips (not supplied) and additional fixings.

- Install the rod on the rail carriage using the Ø8×19 axis and two 4×18 screws (*fig. 14*). Fully tighten the screws.
- Install the rod in the door bracket using the 8×19.5 pin and a stopper (*fig. 15*).
- Move the door leaf into the open position and determine the place to install the support (*fig. 16*). Install the support at a distance of 20 mm from the rail carriage. Fasten the support on the rail using two 3.9×9.5 screws. The support serves as the point of full opening of the door when programming the final positions and a control point during operation in case of abnormal situations.
- Install the drive on the rail and fasten using the bracket and four 6.3×20 screws (*fig. 17*). The product construction allows the drive to turn by 90° in relation to the rail during installation (*fig. 1*).



ATTENTION! Manually install the drive on the rail with care, slightly press behind the star-wheel opening on the rail and the output shaft of the drive will become aligned. Do not use force, as this can damage the external appearance or break the drive. In cases when the drive rail is fastened to the ceiling without suspension strips, install the drive on the rail beforehand. Ensure its integrity during further mounting operations.

- Ensure the necessary length of the release cable. The manual release cable should be located at a height not less than 1.8 m. Put the release label on the cord (*fig. 18*). Make a tie on the end of the cable and clamp it with the two halves of the ball-handle.
- If necessary, pull and release the drive belt/chain from the rail, tightening or loosening the nut at the flat end of the rail (*fig. 19*). Remember that if excessive tension is applied, increased wear of the rail components is possible, and in the case of insufficient tension, slackness and unpleasant noise during operation are possible.

4.2 MANUAL RELEASE

The rail carriage can be released, allowing the door to be moved manually. To release the rail carriage and move the door leaf manually, pull down the manual release cable (*fig. 20*). To return the carriage into the locked position, press the button on the carriage (*fig. 21*), and then move the door leaf until the carriage connects with the rail grip.



ATTENTION! Use the manual release only during installation, in case of drive failure or loss of electric power. In the case of release activation, uncontrolled movement of the door is possible, if the door springs are weak or broken; if the door is not balanced. Be careful and attentive! Move the released door only at a moderate speed. When using, do not pull the cord too hard and do not hang on it with the whole body weight.

In case of using the mechanism for external unlocking, install the cable according to *fig. 31*. When laying the cable, avoid sharp and straight angles, small bending radii. There should be free and easy movement of the cable in the braid. The cable should not sag after laying.

5. ELECTRICAL INTERFACES



ATTENTION! Prior to commencing the wiring operation, make sure that the wire is not **'live'**.

When using and installing additional electric devices (accessories) follow the manuals supplied. Incorrect connection can result in the failure of the drive.

Use only additional devices (accessories), offered by ALUTECH (including AN-Motors). ALUTECH does not bear responsibility for unstable operation of the drive system, if additional devices, produced by other manufacturers, are used.

If no devices are connected to terminals **'PH1'** and **'S'**, crossovers should be installed. If a safety device is connected to the terminals mentioned, remove the crossover.

Open the lid on the drive to access the additional device connectors, configuration and indication elements. Press the latch and turn the lid (*fig. 22*).



Table 4 describes the contacts of the drive connectors used to connect additional devices. The connection diagram and symbols are presented in *fig. 23*.

Figures 24–28 show examples of connecting additional devices (accessories), manufactured by ALUTECH:

- figure 24—connection of a signal lamp with built-in antenna.
- figure 25 —photocells connection.
- figure 26—connection of photocells with **PHOTOTEST** function.
- figure 27—connection of optical safety margin.
- figure 28—connection of resistive safety margin.


Table 4

CONTACT	DESCRIPTION
SL/LL	Alarm lamp or illumination lamp connection output (see <i>fig. 24</i>). By default, the output is set to work in the SL lamp mode (signal lamp). In settings (section '6. Adjustment' P8–F4) you can select the output operation mode
SBS	Input for step-by-step control devices with NO contact. Sequence of commands OPEN—STOP— CLOSE—STOP—OPEN... Several control units are connected in parallel
S	Safety devices input STOP with NC contact. The activation results in immediate stop of movement or preventing any movement beginning. Several safety devices are connected consecutively
+12 V	Accessories output. Nominal power voltage 12 V DC/max. 120 mA
+24 V	Accessories output. Nominal power voltage 24 V DC/max. 120 mA
GND	General output
SE	Optical sensors connection input or input of resistive margin of safety (8.2 kOhm). In settings (section '6. Adjustment' P7–F4) the following can be selected, depending on the connected safety device: resistive sensor (<i>fig. 28</i>) or optoelectronic sensor (<i>fig. 27</i>). The contact of the door with an obstacle during closing (activation of a sensor) causes the door to stop moving and then fully open

PH1	Photocells connection input with NC contact. By default, the input is set to the activation of photocells during closing (they are not active during opening). The activation of photocells during closing results in an immediate stop, followed by full opening, or preventing further closing beginning. When setting the photocells to operate only during opening (section '6. Adjustment' P7-F1) the activation of the photocells results in immediate tripping. Several safety devices are connected consecutively
PH.T	The output for automatic operation test (PHOTOTEST) of photocells, connected to output PH1 . The operation of the photocells is checked before movement by short-term disconnection and then reconnection of the power to the photocells transmitter. Photocells connection diagram— <i>fig. 26</i> . In settings (section '6. Adjustment' P7-F3) the activation of the corresponding menu option is performed. After the door closing in standby mode, the output ' PH.T ' is turned off. The consumption of photocells is less as the power of the photocell transmitter is turned off. At the beginning of the door opening the output ' PH.T ' is turned on
	Connection input of the antenna screening conductor
	Connection input of the antenna signal conductor
	The connector (<i>fig. 29</i>) used to connect the 24 V DC/1.2 Ah battery. The battery gives the opportunity to open the door in the emergency mode (in case of supply voltage disconnection). The full charge time of the battery is 48 hours

The operation of the devices is shown by LEDs (*fig. 30*).

Table 5





LED	INDICATION DESIGNATION	ILLUMINATES	DOES NOT ILLUMINATE
	A radio control command is received (the LED shines in red if the console or the remote control button is not recorded/shines green if the remote control button is recorded)	is given	not given
PH1	Safety device—photocells (input ' PH1 ')	was activated	was not activated
S	Safety device— STOP (input ' S ')	was activated	was not activated
SBS	command to open, stop, close (input ' SBS ')	is given	not given




ATTENTION! The state of LEDs, when a command is not given, is shown in bold.

6. ADJUSTMENT

The adjustment of the drive is performed using the board with buttons. A display is used for indication (*fig. 30*).

-  — the button to enter the settings menu and to exit the menu.
-  — the button to enter the settings and confirm the selected value.
-  — the button to move step-by-step to the menu with the zoom; it is also used to control the opening process when setting the end positions manually.
-  — the button to move step-by-step to menu with reduction; it is also used to control the closing process when setting the end positions manually.

6.1 ADJUSTMENT OF THE DOOR POSITION























The end **OPEN** and **CLOSED** positions are set manually (setting **P1–F1**) or automatically (Express setup **P1–F3** with a switch to the recording of remote controls). If the end positions are not set, the drive does not execute a commands, and two dots will appear on the display .



After the end positions are set, **P5** and **P6** menu settings are automatically reset to the factory default values (table 16).

SETTING P1–F1: programming the end positions manually

Table 6

1	Press and hold the button  for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button 	
3	After the appearance of 'F1' inscription press the button 	
4	Using the button  or  set the door in the OPEN position. ATTENTION! In the OPEN position the carriage rail should be at a distance 20 mm from the support; installation of support is compulsory (fig. 16)	
5	Press the button  ; after that a dot will appear on the display, which means the OPEN position	
6	Using the button  or  set the door in the CLOSED position. ATTENTION! Avoid excessive pressing of the door leaf against the doorway in the CLOSED position. After programming the end positions, the force required for the manual release (section 4.2. 'Manual release') must not be more then 220 H	
7	Press the button  ; after that a dot will appear on the display, which means the CLOSED position. ATTENTION! Automatic movement of the door begins immediately	
8	The door automatically moves to the OPEN position	
9	The door automatically moves to the point of contact	
10	The door automatically returns to the OPEN position	
11	The door automatically returns to the CLOSED position	
12	After completion of all positional settings of the door, 'F1' inscription will appear; to exit the setup menu press twice the button  or wait for 15 seconds	

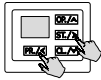
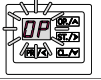








SETTING P1–F3: express-setup of the end positions and radio control setup

The end **OPEN** and **CLOSED** positions are set automatically with a switch to the recording of remote controls in the programming mode **P2–F1** (tab. 9).



ATTENTION! Make sure that a support is installed on the rail for the **OPEN** position (fig. 16).

Table 7








1	Simultaneously press and hold the buttons PR./◀ and ST./▶ for 5 secs. ATTENTION! Automatic movement of the door begins immediately. Watch the movement of doors. The automatic setting can be stopped with pressing any button on the drive panel. Note: the express-setup procedure can be started similarly, if the mode 'P1' and the setting 'F3' are selected	
2	The door automatically moves to the contact point between the carriage rail and the support, and a dot appears on the display	
3	The door automatically moves to the CLOSED position. Movement continues to the upper panel support, and after that a dot appears on the display	
4	The door automatically moves to the OPEN position	
5	The door automatically moves to the CLOSED position	
6	'rc' is shown on the display, which means that the recording of remote controls in 'step-by-step' mode is expected	
7	Press the selected control button on the remote control three times	
8	The indicator will automatically show the number offered for a remote control in the drive memory (the number can be changed using the buttons OP./▲ or CL./▼)	
9	Press the button ST./▶ to confirm; after that a dot will appear on the display	
10	In three seconds the automatic switch to the recording of the next remote control will take place. To exit the programming mode press the button PR./◀ three times or wait for 15 seconds	

SETTING P1–F2: setting the 'pedestrian position'/partial opening

The **PEDESTRIAN** position can only be set from the remote control board, recorded with this control mode (menu **P2** mode **PE**). The **PEDESTRIAN** position can be set from any position of door (end or intermediate position).

The **PEDESTRIAN** position can only be set when the end positions are set.

Table 8

1	Press and hold the button PR./◀ for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button ST./▶	
3	After the appearance of 'F1' inscription press the button OP./▲	
4	After the appearance of 'F2' inscription press the button ST./▶	
5	After the appearance of 'PE' inscription set the door in the PEDESTRIAN position with the buttons OP./▲ or CL./▼	
6	Press the button ST./▶ ; after that a dot will appear on the display, which means the pedestrian position	
7	To exit the menu, press twice the button PR./◀ or wait for 15 seconds	

6.2 RADIO CONTROL SETUP

The menu '**P2**' (tab. 9) offers six settings of the remote control recording (**F1–F6**), the setting of defining the recording number of the remote control (**F7**), two settings of deleting the remote control (**F8, F9**) and the setting of deleting all remote controls (**F0**).

Table 9

MENU	SETTING	DESCRIPTION
P2	F1	Recording of one button with ' SBS ' control mode
	F2	Recording of two buttons with ' SBS ' and ' PE ' control modes
	F3	Recording of two buttons with ' SBS ' and ' LL ' control modes
	F4	Recording of three buttons with ' SBS ' and ' LL ' control modes
	F5	Recording of four buttons with ' OP ', ' STOP ', ' CL ' and ' PE ' control modes
	F6	Recording of four buttons with ' OP ', ' STOP ', ' CL ' and ' LL ' control modes
	F7	Determining the recording number of the remote control in the memory (if there is a remote control)
	F8	Deleting the remote control based on its code (it is used when there is a remote control but the information for the remote control number in the drive memory is not available)
	F9	Deleting the remote control based on the number in the drive memory (it is used when a remote control is absent but the information for the remote control number in the drive memory is available)
	F0	Deleting all remote controls

- SBS** — the step-by-step control mode.
Sequence of commands **OPEN—STOP—CLOSE—STOP—OPEN...**
- OP** — the **OPEN** control mode. The command to open the doors
- CL** — the **CLOSED** control mode. The command to close the doors
- STOP** — **STOP** control mode. The command to stop the doors
- PE** — the pedestrian position control mode. The command for partial opening of door, if the partial position of door is set (setting **P1–F2**)
- LL** — the light lamp mode. If the door does not move, the commands to turn on and off the built-in lighting of the drive (illumination) and lamp connection output **SL/LL** are executed. The **SL/LL** output is controlled with the remote if the light lamp **LL** output has been set up (**P8–F4** setting)

Recording the remote controls

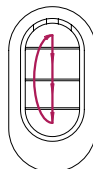


ATTENTION! If you need to overwrite a previously recorded remote control (when you need to record another button of the remote or record the remote in another mode), it must first be deleted from memory!

The pressed button when recording will control the remote in the first mode in the list (tab. 10). All other buttons of the remote control will be recorded automatically in the order specified in the table 10 modes (refers to the settings in which several buttons are recorded).

Table 10

MODE	SETTING					
	F1	F2	F3	F4	F5	F6
1	SBS	SBS	SBS	SBS	OP	OP
2	—	PE	LL	PE	STOP	STOP
3	—	—	—	LL	CL	CL
4	—	—	—	—	PE	LL



In the case of **F1–F4** settings, the unused buttons of the remote control can be recorded for control in other ALUTECH products, where **AT-4N** remote control can be recorded.

Table 11

1	Press and hold the button PR./◀ for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button OP./▲	
3	After the appearance of 'P2' inscription press the button ST./▶	
4	Using the button OP./▲ or CL./▼ select the required setting of remote control recording in the menu 'F1...F6'	
5	After the appearance of required setting press the button ST./▶	


6	'rc' is shown on the display, which means that the recording of remote controls is expected	
7	Press the selected control button 3 times on the remote (the first control button)	
8	The number which is to be assigned to the remote in the drive memory, will automatically appear on the display (with the button OP./▲ or CL./▼ the number can be changed)	
9	Press the button ST./▶ to confirm; after that a dot will appear on the display	
10	In three seconds the automatic switch to the recording of the next remote control will take place. To exit the programming mode press the button PR./◀ three times or wait for 15 seconds (until automatic exit the setup menu)	

Deleting the remote control and defining of the record number of the remote

The *table 12* describes the settings, it is used when there is a remote control but the information for the remote control number in the drive memory is not available.






Table 12

1	Press and hold the button PR./◀ for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button OP./▲	
3	After the appearance of 'P2' inscription press the button ST./▶	
4	With the button OP./▲ or CL./▼ select the required setting: 'F7'—defining the number of the remote control; 'F8'—deleting the remote control	
5	After the appearance of required setting ('F7' or 'F8') press the button ST./▶	
6	'rc' is shown on the display, which means that a signal from the remote control is expected	
7	Press the selected control button 3 times	
8	The display will automatically show the number of the remote control in the drive memory. If the remote control is not recorded, 'no' will be shown on the display	
9	To set 'F8' press the button ST./▶ . A dot will disappear from the display, this means that the remote control with the selected number is deleted from the memory	

10	In three seconds the switch to the waiting mode for the signal from the next remote control will take place. To exit the programming mode press the button PR./◀ or wait for 15 seconds (until automatic exit the setup menu)	
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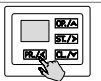






The *table 13* describes the settings of deleting the remote control when it is absent but the information for the remote control number in the drive memory is available.

Table 13

1	Similarly to <i>tab. 12</i> items 1 to 4 , enter the menu ' P2 ' and select the setting ' F9 '	
2	After the appearance of ' F9 ' inscription press the button ST./>	
3	The number of the first recorded remote control will appear on the display. With the button OP./▲ or CL./▼ select the of remote to delete	
4	Press the button ST./> . A dot will disappear from the display, this means that the remote control with the selected number is deleted from the memory	
5	In three seconds the next number of the remote control will appear on the display. To exit the programming mode press the button PR./◀ or wait for 15 seconds (until automatic exit the setup menu)	

Deleting all remote controls

Table 14

1	Press and hold the button PR./◀ for about 5 secs to enter the programming mode	
2	After the appearance of ' P1 ' inscription press the button OP./▲	
3	After the appearance of ' P2 ' inscription press the button ST./>	
4	With the button OP./▲ or CL./▼ select the setting ' F0 '	
5	After the appearance of ' F0 ' inscription press the button ST./>	
6	After the appearance of '—' inscription press and hold the button ST./> for 5 secs. A dot will appear on the display, this means that all remote controls are deleted from the memory	
7	To exit the programming mode press the button PR./◀ twice or wait for 15 seconds (until automatic exit the setup menu)	



ATTENTION! Before the first programming of the remotes, clean the drive memory from the previously recorded remotes. If the remote control is absent, the number of the absent remote control must be deleted from the memory to prevent the unauthorized entry. If the number of the absent remote control is unknown, delete all numbers of the remotes and re-record all remote controls.

6.3 SETTINGS OF OPERATION VALUES

The *table 15* shows an example to enter the settings menu and to set the operation values.



Table 15



1	Press and hold the button PR./< for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button OP./▲ or CL./▼ and select the required menu 'PN'	
3	After the appearance of the required menu inscription press the button ST./>	
4	With the button OP./▲ or CL./▼ select the required setting 'FN'	
5	After the appearance of the required setting inscription press the button ST./>	
6	The value of setting will be on a display. The value will be with a dot. With the button OP./▲ or CL./▼ select the required value of setting	
7	After the appearance of the required value of setting press the button ST./> . The value will be with a dot, that means the change the setting	
8	To exit the programming mode press the button PR./< three times or wait for 15 seconds (until automatic exit the setup menu)	

The *table 16* describes the settings, values of setting and default values for the drive supply.

Table 16

MENU	SETTING	DESCRIPTION	VALUES	DEFAULT VALUE
P1	F4	The adjustment of end positions. The function is designed to monitor and adjust the end positions once every 100 cycles of raising and lowering the gate (<i>fig. 16</i>)	no—OFF/on—ON	no.
P3	F1	Automatic mode. The control is performed by means of short presses on the control button		on.







MENU	SETTING	DESCRIPTION	VALUES	DEFAULT VALUE
P3	F2	Manual mode. Control is performed by means of holding the control button in the pressed state (buttons OP./▲ or CL./▼ and drive connection 'SBS' output). The remote control commands are not executed. Connected security devices are activated. The manual mode disables the automatic mode	no—OFF/on—ON	no.
P4	F1	Pause time until automatic closing from any position except pedestrian	no—OFF/ 00, 01... 99 00—0 sec; 99—99 secs	no.
	F2	Pause time until automatic closing from any position except pedestrian after photocells activation (the input connection 'PH1')		no.
	F3	Pause time until automatic closing from the pedestrian position. It is performed if the pedestrian position have been set (setting P1–F2)		no.
	F4	Pause time until automatic closing from any position except pedestrian after photocells activation (the input connection 'PH1'). It is performed if the pedestrian position have been set (setting P1–F2)		no.
 If automatic closing is enabled (pause time is set), the PHOTOTEST function (P7-F3-on setting) will be automatically enabled and the PH1 connection input will only be active when closing (P7-F1-CL setting). The connection of photocells is obligatory according to fig. 26 (EN 12453 device type D)				
P5	F1	Drive force when opening. When opening, the detection of foreign object by the drive will result in an immediate stop of movement	ATTENTION! Force and speed settings are made by the manufacturer. The factory settings of force and speed ensure compliance with the requirements of the safety standard (EN 12453 type C of built-in device) for a certain type of ALUTECH doors with the permissible limit parameters (section 2.2. 'Technical parameters'). In other cases, a specialist must check the compliance with the requirements of the standard (EN 12453) or the another type of safety device (EN 12453 type E) should be applied.	
	F2	Drive force when closing. When closing, the detection of foreign object by the drive will result in an immediate stop of movement and in subsequent full opening		
P6	F1	Speed of door movement when opening. The maximum speed is set at the factory settings of the drive		
	F2	Speed of door movement when closing. At the factory settings of the drive, the speed of the doors when closing is ~20% less than the speed when opening		
	F3	Time of smooth door acceleration at the beginning of opening		
	F4	Delay time of door movement before the final position of opening		
	F5	Time of smooth door acceleration at the beginning of closing		
	F6	Delay time of door movement before the final position of closing		
 The setting and adjustment of the force and speed should be carried out by qualified personnel (EN 12635) of the competent organization. Settings should ensure safe and correct operation of the doors in accordance with applicable regulations (EN 12453), excluding damage and false positives. The user is blocked from entering the P5 and P6 menu				

MENU	SETTING	DESCRIPTION	VALUES	DEFAULT VALUE
P7	F1	Select the operating mode of the photocells (input 'PH1'). The input is activated when opening, or is activated when closing	CL —is activated when closing/ OP —is activated when opening	CL.
	 Connection input 'PH1' will be active only when closing (CL), if automatic closing is enabled (pause time is set in P4-F1...F4 settings)			
	F3	Function 'PHOTOTEST' : The operation of the photocells is checked before movement by short-term disconnection and then reconnection of the power to the photocells transmitter. Photocells connection diagram— <i>fig. 26</i>	no —OFF/ on —ON	no.
	 Function 'PHOTOTEST' cannot be switched off (no) if the automatic closing is enabled (pause time is set in P4-F1...F4 settings)			
	F4	Select the operating mode of the safety sensor (input 'SE'). The input is not activated, or is configured for a resistive sensor (8.2 kOhm), or is configured for an optoelectronic sensor (optosensor/OSE)	no —OFF/ 01 —sensor 8.2 kOhm/ 02 —optosensors	no.
P8	F5	Photocells blocking close to the floor level and the safety sensor (input 'SE') . The setting specifies the distance from the floor where the photocells and the safety sensors are ignored	no —OFF/ 01, 02, 03...99 99 —maximum 200 mm	no.
	F1	The setting of output SL/LL in signal lamp mode SL : continuous or flashing	no —flashing/ on —continuous	on.
	F2	The delay time of the movement beginning (time of the preliminary activation of the signal lamp). During the delay time, the signal lamp (SL) works, it signals the beginning of door movement by a set number of seconds	00, 01...10 00 —0 sec, 10 —10 secs	00.
	F3	Operating time in the illumination lamp (LL) mode and the drive illumination after stopping the door movement	no/01, 02...99 no —after the end of door movement it is off (0 sec) 01 —5 secs; 99 —500 secs (8 min 20 secs)	06. (30 secs)
	F4	The output mode 'SL/LL' : the signal lamp (SL) or the illumination lamp (LL). The signal lamp (SL)—works when the door movement and when the door movement is delayed (P8-F2 time setting). The illumination lamp (LL)—works when the door movement and after stopping the movement (time setting P8-F3)	no —signal lamp/ on —illumination lamp	no.

6.4 FACTORY RESET

The factory reset restores the settings that are set by default when the drive delivering. The configured positions of the door will be deleted. The recorded remote controls will be saved.

Table 17

1	Press and hold the button PR./◀ for about 5 secs to enter the programming mode	
2	After the appearance of 'P1' inscription press the button CL./✓	
3	After the appearance of 'P0' inscription press the button ST./➤	
4	After the appearance of 'F0' inscription press the button ST./➤	
5	After the appearance of '—' inscription press and hold the button ST./➤ for 5 secs. A dot will appear on the display, this means the resetting to default settings	
6	To exit the programming mode press the button PR./◀ twice or wait for 15 secs (until automatic exit the setup menu). The display will show two dots	

7. TESTING AND COMMISSIONING

This is an important stage of drive system installation. The test is performed as follows:

- make sure that the requirements of section 1. 'General warnings and safety rules' and other manual requirements are met in full.
- ensure stable and secure mounting of the drive and the guide rail.
- unblock the drive (section 4.2. 'Manual unblocking'). Manually open and close the door several times. Make sure that there are no points of increased resistance to motion, and there are no assembly and adjustment defects of the doors and drive. Return to the blocked state.
- perform the full **open-close** cycle. Make sure, that the door moves in the required directions, the leaf of the door moves smoothly. At the end of opening and closing the door moves slowly.
- check the guide belt/chain tension degree and tighten if necessary (fig. 19).
- make sure that the integrated LED backlight is functioning. It is active when the door is moving and for a set time after the door stops.
- check the correct working of the connected control devices (control buttons, remote controls).
- check the correct working of each connected safety and alarm device (photocells, movement stop devices, lamps etc.). Check the photocells for the absence of interaction with other devices, to do so—close the optical axis: first close to TX photocell (transmitter), then close to RX photocell (receiver) and then in the middle, between the two photocells. Make sure that in all cases the drive properly reacts to the activation of photocells (during closing the door stops and then fully opens).
- check the ability of the drive to identify the interaction with foreign objects during closing. Put a 50 mm high obstacle on the floor. When the door contacts the obstacle during door closing, the drive should stop the door and open completely.

- check that during closing when you stop the doors with both hands, the doors stop and then open. During opening when you stop the doors with both hands, the doors stop.

Commissioning of the drive system can be done only after successful completion of tests. Partial commissioning or temporary operation are forbidden.

Commissioning requires the installer to:

- prepare and keep technical documentation for the automation set. The documentation shall include: general drawing, circuit layout, assembly and operation manual, as well as maintenance schedule.
- pass the filled 'Assembly and operation manual' to the user (owner).
- prepare the 'Maintenance schedule' and give it to the user (owner).
Instruct about maintenance rules.
- instruct the owner about the existing hazards and risks, and inform about safe operation rules. Explain to the owner the need to inform the persons operating the door about the existing hazards and risks, and about safe operation rules.

8. TECHNICAL MAINTENANCE

Perform scheduled maintenance of the drive system to ensure efficient and safe operation. Scheduled maintenance shall strictly comply with the existing regulatory documents, instructions in this manual, instructions for other involved devices, and following the safety rules. Perform scheduled maintenance at least once every six months.

Scheduled maintenance shall include:

- read the section 1. 'General warnings and safety rules'.
- check the wear of the set elements, paying attention to oxidization of the components. Replace all parts and units with an unacceptable degree of wear. Use original parts from the manufacturer.
- check the correctness of the door stop in its final positions. If necessary, reprogram the final positions.
- clean external surfaces of the drive and safety devices. Clean with the help of a soft moist cloth. The use of the following for cleaning is forbidden: water jets, high pressure cleaners, acids and alkali.
- perform the check according to the instruction in section 7. 'Testing and commissioning'.

9. TROUBLESHOOTING



ATTENTION! In case of a failure, which cannot be repaired, based on the information provided in this manual, consult the service department. Information about the service department can be obtained from your supplier (vendor, installation company).

Table 18

FAULT	POSSIBLE REASON	RECOMMENDATIONS
Drive does not work (ALUTECH logo on the drive is not lit; display does not react, when buttons on the front plate are pressed)	No supply voltage or fuse is blown	Check the supply voltage. Check, and if necessary, replace the fuse (fuse parameters should comply with the marking)
Drive is not controlled by the remote control (indicator on the control is not lit)	Remote control code is not recorded in the drive control unit memory	Record the remote control in the drive memory

FAULT	POSSIBLE REASON	RECOMMENDATIONS
Drive is not controlled by the remote control or the distance of the remote-control operation is small	Low battery in remote control	Check the remote-control battery and replace, if necessary
Drive works after a command, but the door does not move	The drive rail carriage is not blocked	Block the drive rail carriage
Door does not stop in final positions	Final positions have changed due to abnormal situation	When an obstacle is found, the drive will independently specify the final positions during next opening based on the support, installed on the rail
Drive does not react to obstacles on the optical axis of photocells during door operation	Photocells are malfunctioning or the incorrect operating mode of the photocells is selected	Check the performance of photocells, replace, if necessary; check the selected photocells mode in the menu
The drive stops during opening and performs independent reverse movement when closing; the indicator shows error number 'E1'	Obstacle, resulting in force (power consumption) excess, is found	Make sure that there are no obstacles and check the correct operation of the door (absence of 'jamming' during operation; correct balance etc.); contact a qualified specialist or customer service
The drive stops during opening and completes independent reverse movement when closing; the indicator shows error number 'E2'	Photocells are activated	Check the performance of photocells, replace, if necessary; check the selected photocells mode in the menu
The drive performs independent reverse movement when closing; the indicator shows error number 'E3'	Optical sensors of safety margin are activated	Check the performance of the safety margin, replace the failing components, if necessary; check the selected safety margin mode in the menu
The drive does not start working, when command is given; the indicator shows error number 'E4'	Error occurred during phototest	Check the performance of photocells, replace, if necessary; check the selected photocells mode in the menu
The drive does not start working or spontaneously stops, when command is given; the indicator shows error number 'E5'	Tripping occurs based on the signal on input STOP	Check the working condition of the safety elements, connected to the STOP input (or crossover presence), replace them, if necessary
The drive does not start working, when command is given; the indicator shows error number 'E6'	The drive overheats due to excessive heating or excessively intensive operation	Take a break in drive operation for 10...15 minutes, sufficient for the internal elements to cool down; do not allow operation of the drive with the intensity exceeding the one, stated above
Error number 'E8' is shown on the indicator when the final positions are being set	Either support is not installed on the rail, or the support is installed at a larger distance from the OPEN position, than required	Set the support at a distance 20 mm from the OPEN position and repeat the final positions adjustment procedure
The error number 'EE' is on the indicator when the drive is not operated or moves briefly	Drive failure (wrong signal of the gear-motor encoder)	Contact customer service
After the control command is given, the built-in drive light flashes	An error occurs in the operation of the drive	When the backlight blinks, check the error display on the drive display. Repair the drive according to the error description

10. STORAGE, TRANSPORTATION AND DISPOSAL

The product shall be stored in its packaging in closed dry spaces. Do not expose to atmospheric precipitation or direct sunlight. Shelf-life is 3 years from the manufacture date. Transportation can be performed using all types of covered ground vehicles, with measures to prevent shock and movement inside the vehicle.



Disposal of the product shall comply with the regulatory and legal requirements on recycling and disposal, valid in the user's country. The product does not contain substances, posing danger to life and health of people, and environment.

11. WARRANTY OBLIGATIONS

- The operational capacity of the product is guaranteed only when the rules of its storage, transportation, adjustment, operation are followed; when mounting and maintenance (timely and due) is performed by an organisation, specialising in the sphere of automation and authorised to perform mounting and maintenance operations.
- The warranty period is _____ and starts from the date of product delivery to the Customer or from the production date, when the delivery date is not known.
- During the warranty period the defects, caused by the Manufacturer, are repaired by the service department, providing warranty maintenance.

Note: the parts, replaced by the service department, performing the product repair, become the department's property.

- Warranty is not applied in the following cases:
 - violation of storage, transportation, operation and mounting rules;
 - mounting, adjustment, repair, remounting or modification of the product by persons, not authorised to perform such works;
 - damage of the product, resulting from unstable work of the power supply system or non-compliance of the power supply system with the values, established by the Manufacturer;
 - damage of the product, caused by water penetration;
 - force-majeure (fires, lightning, floods, earthquakes and other natural calamities);
 - damage of the product construction by the consumer and third parties;
 - malfunctioning and defects, caused by the absence of scheduled maintenance and inspection of the product;
 - completed manual is not provided.

For questions about the service, please contact the organization that carried out the installation of the equipment.

12. COMMISSIONING CERTIFICATE

Serial number and production date _____
data from the product label

Information on the organisation, authorised to perform mounting and maintenance

name, address, phone

Mounting date _____
day, month, year

LS

Signature of the person,
 in charge of mounting _____
signature full name

The consumer (Client) has checked the content of the set, is informed on and agrees with the warranty period, and has no complaints about the external look of the product. The product is mounted and adjusted according to the established requirements and is approved for operation. The user was instructed on the existing hazards and risks, and informed about operation rules. Information about the client (consumer) _____

 name, address, phone

Client's (customer's)

signature _____

signature

full name

13. INFORMATION ON REPAIRS DURING WARRANTY PERIOD

Information about repairing organisation _____

List of repairs _____

Repair date _____

day, month, year

LS

Signature of the person
 in charge of repair _____

signature

full name

 Information about repairing organisation _____

List of repairs _____

Repair date _____

day, month, year

LS

Signature of the person
 in charge of repair _____

signature

full name

14. STATEMENT OF COMPLIANCE

Copies of declarations of compliance you may find at:

<http://www.alutech-group.com/en/products/other/automatics/documents>

Made in China. Manufacturer: 'Shanghai Baolu Technology Co., Ltd.'

8/f, Xianglu Industry Park, 3009 Gudai Road, Shanghai 201100, China.

Phone: 0086 21 54888982, fax: 0086 21 54888926

Importer to the Republic of Belarus/Authorised representative:

ALUTECH Systems s.r.o., 348 02, Czech Republic, Bor u Tachova, CTPark Bor, Nova Hospoda 19, D5-EXIT 128. Phone/ fax: +420 374 6340 01, e-mail: info@cz.alutech-group.com